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स्वचल वाहन — रिम — सामान्य अपेक्षाएँ

भाग 8 अर्थमूविंग मशीन के रिम

(पहला पुनरीक्षण)

Indian Standard

AUTOMOTIVE VEHICLES — RIMS — GENERAL REQUIREMENTS

PART 8 EARTHMOVING MACHINE RIMS

(First Revision)

ICS 43.040.50; 43.160

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

August 2009 **Price Group 2**

Automotive Tyres, Tubes and Rims Sectional Committee, TED 7

FOREWORD

This Indian Standard (Part 8) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Tyres, Tubes and Rims Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1983. The first revision is based on the experience gained after publication of the standard and availability of new designs. This standard has been revised to keep pace with the latest technological advancement in the field of wheels/rims for commercial vehicles.

This standard aims at uniform rims profiles that will match the tyres in obtaining proper fitment. The sizes, designations and markings have also been standardized to facilitate uniform adoption during manufacture.

This standard is one of the parts pertaining to rims for various types of automotive vehicles. The other parts in this series are:

(Part 1) : 2009	Nomenclature, designation, marking and measurement (*second revision*)
(Part 2) : 2009	Passenger car (*second revision*)
(Part 3) : 2009	Commercial vehicles rims (*second revision*)
(Part 4) : 2009	Scooter and scooter derivative rims (*first revision*)
(Part 5) : 2009	Moped, motorcycle and motorcycle derivative rims (*second revision*)
(Part 6) : 2009	Rims for agricultural tractors, tillers and implements (*second revision*)
(Part 7) : 2009	Industrial truck rims (*first revision*)

These parts do not lay down methods of testing and performance requirements for wheels/rims pertaining to the respective tyres of automotive vehicles but lay down only the profiles and other general requirements.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AUTOMOTIVE VEHICLES — RIMS — GENERAL REQUIREMENTS

PART 8 EARTHMOVING MACHINE RIMS

(First Revision)

1 SCOPE

This standard (Part 8) covers the rim contours and other general requirements for earthmoving machine rims.

2 REFERENCE

IS 10694 (Part 1) : 2009 'Automotive vehicles — Rims — General requirements: Part 1 Nomenclature, designation, marking and measurement (*second revision*)' is a necessary adjunct to this standard.

3 DIMENSIONS

3.1 Rim contours for earthmoving machine rims with dimensions shall be given in Fig. 1 to Fig. 3 and Table 1.

3.2 Valve aperture for earthmoving machine rims shall be as given in **2.3.4** of IS 10694 (Part 1).

3.3 For details of diameter, circumference and mandrel dimensions, *see* **5.3** of IS 10694 (Part 1).

4 DESIGNATION

4.1 The size designation of wheels/rims shall include figures and alphabets representing the following in the order given:

a) Nominal rim width code,
b) Rim flange profile, and
c) Nominal rim diameter code.

4.2 An alphabet signifies the tyre side profile of the rim flange. Usually the profile designation follows the nominal rim width code. It may however, precede or include the nominal rim width.

Example: B 6.5 × 20

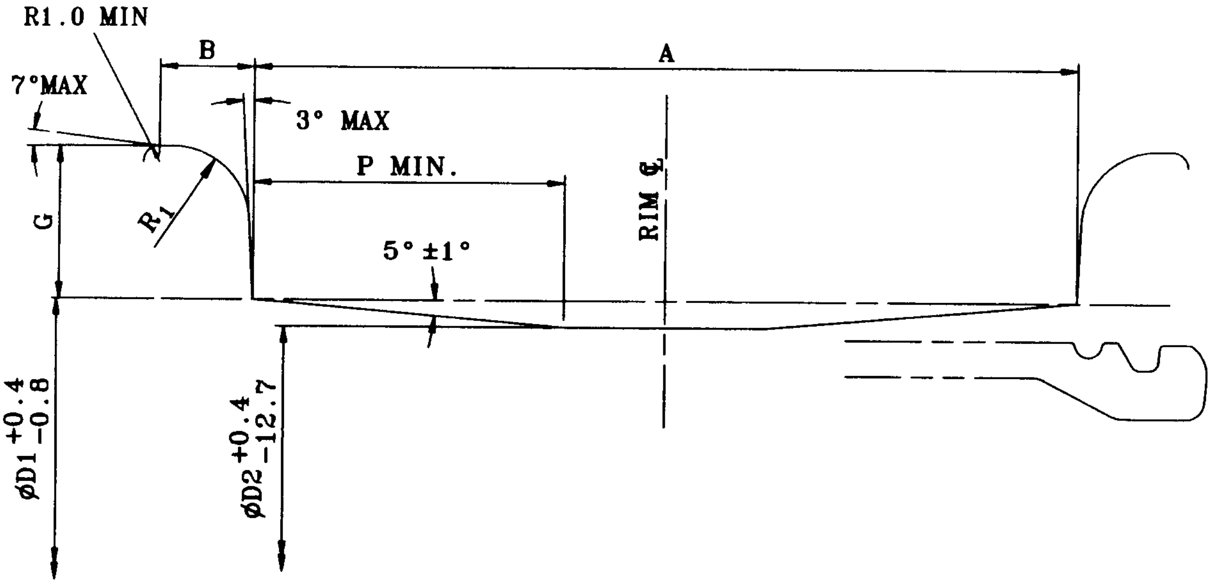
5 RIM CIRCUMFERENCE MEASUREMENTS

The bead seat rim circumference measurements shall be carried out by using a tape gauge whose length is related to a mandrel diameter which is that of the specified rim diameter.

6 OTHER REQUIREMENTS

The rims shall have a smooth contour free from sharp edges on the tyre side.

6.1 Valve-hole edges on rim shall be free from burrs.



All dimensions in millimetres.

Width and Flange Height Code	Contour Dimensions						O-Rings to be Used
	A ± 13	G ± 2.0	B, Min	P, Min	R_1		
11.25/2.0	286	51	32.5	101	32	±1.5	OR 325
13.00/2.0	330	51	32.5	101	32	±1.5	OR 325
13.25/2.5	330	63.5	45.5	101	38	±1.5	OR 325, 333
13.00/2.75[1]	330	70	48.5	101	47.5	±1.5	OR 349
15.00/2.5	381	63.5	45.5	101	38	±1.5	OR 325
15.00/2.0	381	76	55	117.5	44.5	±1.5	OR 325, 335
15.00/3.0-49[1]	381	76	55	117.5	51	±2.0	OR 349
16.00/1.5	406.5	38	30	101	28.5	±1.5	OR 325
17.00/2.0	432	51	32.5	101	32	±1.5	OR 325
17.00/3.0	432	76	55	139	44.5	±1.5	OR 325, 335
17.00/3.5	432	89	58	139	51	±2.0	OR 335, 343, 349
18.00/2.5	457	63.5	45.5	101	38	±1.5	OR 329
19.50/2.0	495.5	51	32.5	101	32	±1.5	OR 325
19.50/2.5	495.5	63.5	45.5	101	38	±1.5	OR 325
19.50/4.0	495.5	101.5	66	139	57	±2.0	OR 349
20.00/2.0	508	51	32.5	101	32	±1.5	OR 325
22.00/3.0	559	76	55	139	44.5	±1.5	OR 325, 329
22.00/4.0	559	101.5	66	139	57	±2.0	OR 333
22.00/4.5-51	559	114.5	74	190.5	63.5	±2.0	OR 451
24.00/3.0	609.5	76	55	139	44.5	±1.5	OR 325, 329, 333
24.00/3.5	609.5	89	58	139	51	±2.0	OR 329
24.00/5.0	609.5	127	56.5	190.5	70	±2.0	OR 451
25.00/3.5	635	89	58	139	51	±2.0	OR 325, 329, 335
26.00/5.0-51	660.5	127	56.5	190.5	70	±2.0	OR 451
27.00/3.0	686	76	55	139	44.5	±1.5	OR 329
27.00/3.5	686	89	58	139	51	±2.0	OR 329, 335
27.00/6.0	686	152.5	97.5	190.5	84	±2.5	OR 457
28.00/3.5	711	89	58	139	51	±2.0	OR 333
28.00/4.0	711	101.5	66	139	57	±2.0	OR 333, 339
29.00/6.0	736.5	152.5	97.5	190.5	84	±2.5	OR 457
31.00/4.0	787.5	101.5	66	139	57	±2.0	OR 335
32.00/4.0	813	101.5	66	139	57	±2.0	OR 339
32.00/4.5	813	114.5	74	139	63.5	±2.0	OR 333, 339, 451
36.00/4.5	914.5	114.5	74	139	63.5	±2.0	OR 339, 445
40.00/4.5	1 016	114.5	74	139	63.5	±2.0	OR 345, 451
44.00/5.0-51	1 117.5	127	86.5	190.5	70	±2.0	OR 451
52.00-5.5	1 321	139.5	90	190.5	76	±2.0	OR 451

[1] For 49" rim diameter code and above. For diameter code, refer Table 1.

Fig. 1 Rim Contour — 5 Piece Rim

Table 1 Earthmover Diameters

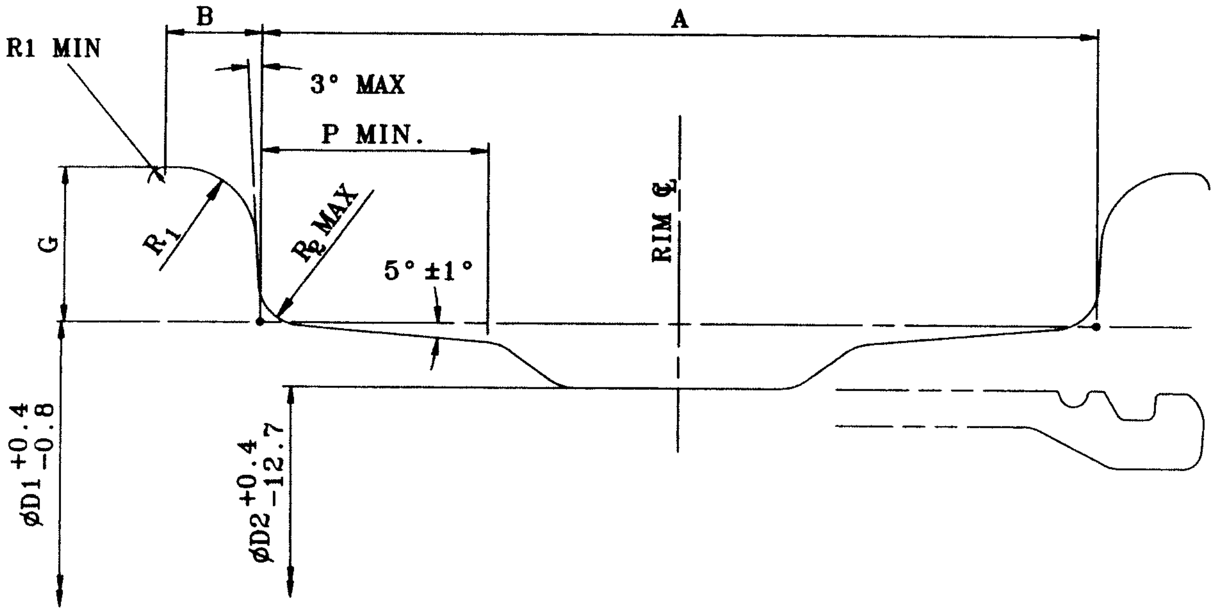
(*Clause* 3.1)

All dimensions in millimetres.

Sl No.	**Nominal Diameter Code**	**Dimensions** (*Min*)	
		Specified Diameter D_1[1)]	Diameter D_2
(1)	(2)	(3)	(4)
i)	24	616	609.6
ii)	25	635	609.6
iii)	29	736.6	711.2
iv)	33	838.2	812.8
v)	35	889	863.6
vi)	39	990.6	965.2
vii)	43	1 092.6	1 066.8
viii)	45	1 143	1 117.6
ix)	49	1 244.6	1 219.2
x)	51	1 295.4	1 244.6
xi)	57	1 447.8	1 397

[1)] Tolerance of ±0.8 mm on D_1 for all rims of 49 Diameter Code and above and for the following rims : 10.00/1.5, 14.00/1.5 and 17.00/1.7.

RIM WITH ONE REMOVABLE FLANGE

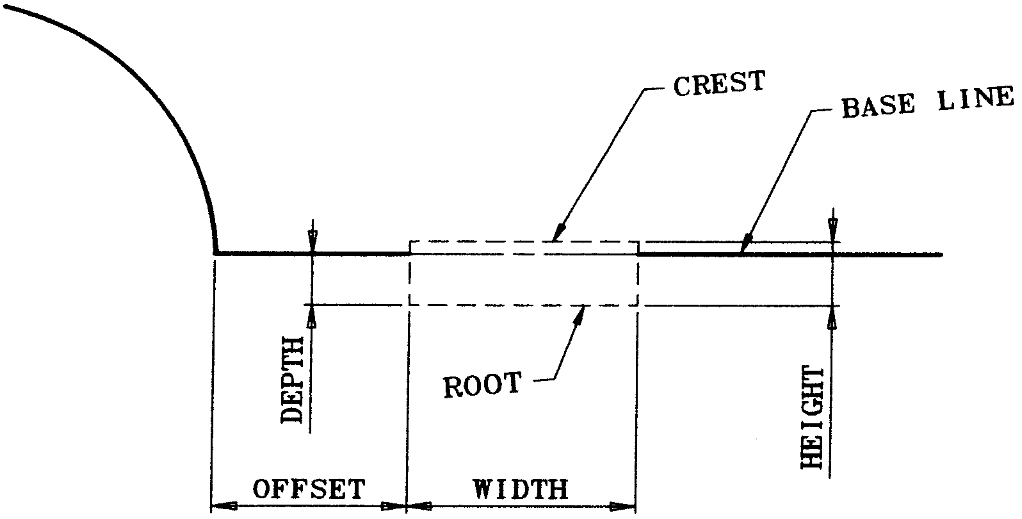


Contour Dimensions

Rim Contour	**Dimensions** (mm)								**O-Rings to be Used**
	A		*G*		*B* *Min*	*P* *Min*	R_1±1.5	R_2 *Max*	
10.00/1.5	254	±5	38	±1.5	28	59	25.5	8	OR 225
14.00/1.5	355.5	±6.5	38	±1.5	28	59	25.5	10	OR 225
17.00/1.7	432	±13	43	±2	25.5	60	23	8	OR 225

FIG. 2 RIM CONTOUR — 3 PIECE

TRANSVERSE KNURLING SPECIFICATION FOR EARTH MOVER RIM



All dimensions in millimetres.

Details	*Min*	*Max*
Pitch	1.5	5.0
Height of crest to root	0.8	1.0
Depth from baseline to root	—	0.8
Offset	9.5	16.0

KNURLING WIDTHS FOR RIMS

Rim Width Code	**Knurling Width**	
	Fixed Flange Side	Removable Flange Side
Rim Diameter Codes 24 to 49		
11.25 to 15.00	25 *Min*	51 *Max*
		38 *Min*
17.00 and above	67 *Max*	67 *Max*
	38 *Min*	38 *Min*
Rim Diameter Codes 51 and Larger		
22.00 and above	67 *Max*	67 *Max*
	53.5 *Min*	53.5 *Min*

FIG. 3 KNURLING DETAILS

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Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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